

Display

TD

Replacement of Parts

Display

17" Color TFT Monitor (DSC 1703-DC-V)

Applicable for Part No. 30 99 959

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Safety Information

Assuming a complete replacement, no contact points for line power, etc. are present.

NOTE

ARTD-002.732.17.. (Safety-technical Regulations for Installation and Repair) must be observed.

⚠ WARNING

Certain components inside the units are under high voltage!

If there is contact with these components, it can cause damage, serious bodily injury or death.

⇒ **Do not open the monitor housing; this is not necessary in a service situation.**

⚠ WARNING

A damaged power cable can lead to fire or electric shock!

If these components are operated with a damaged power cable, it can cause damage, serious bodily injury or death.

⇒ **Use only power cables that are in good condition! When unplugging the power connector, hold the power cable only by the connector.**

⚠ WARNING

If objects are inserted into the housing, this can cause electrical shock.

This can cause damage to the unit, to other damage, serious bodily injury or death.

⇒ **Do not insert objects into the housing!**

⚠ WARNING

When handling connection cables, no contact with the patient may be made.

This can cause damage, serious bodily injury or death of the patient.

⇒ **Do not connect the unit in the patient area!**

Monitor Remarks

- A laptop is not required for adjustment. All adjustments can be performed in an on-screen menu, accessible using the push-buttons (front of frame).
- Power switch:
The TFT monitor has a power switch; seen from the front, this is at the bottom right, behind the front panel.

TFT Monitor, 30 99 959

NOTE

In a replacement part situation, only this Part No. may be used again.

- The DSC 1703-DC-V (model designation) is a high-resolution, 17" TFT color monitor (43 cm). Shipment of the TFT monitor is always without the base.
- For the "table mode", an additional base is available.
- When used with the base, the "dark" rubber seal is replaced by a silver rubber seal. The silver rubber seal is part of the "base shipment".
- OSD operation is performed using the push-buttons located at the bottom right of the front panel.



Fig. 1: DSC 1703-DC-V (front without base)

Pos. 1 Plastic frame for adapting the 17" panel to the 18" housing

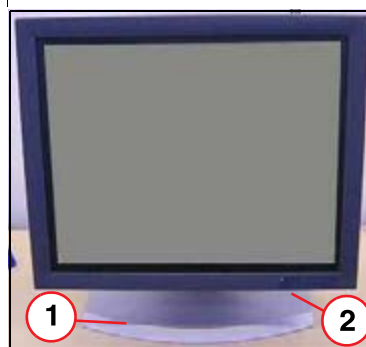


Fig. 2: DSC 1703-DC-V (front incl. base)

Pos. 1 Base

Pos. 2 Power switch (behind front panel)

Technical Data

Power Supply	<p>Voltage range => 100V to 240V, +/- 10%</p> <p>Fine fuse => 2x 3.5 A quick-blow</p> <p>Power line frequency => 47Hz to 63Hz</p> <p>Power consumption => < 75W</p>
Inputs	<p>DVI Socket (29-pole): => input for DVI analog signal or DVI digital signal.</p> <p>Sub-D Socket (15-pole): => H/C synch input and V synch / RGB input.</p> <p>Mini DIN Socket (4-pole): => S video input</p> <p>BNC Socket: => BAS signal input</p> <p>Analog Signal Level: Video level: 0,5 ... 1.00 Vpp Sync level: 0,2 ... 0.4 Vpp</p>
Resolution	max. 1280 x 1024 (format filling)
Background Brightness	<p>200 cd/m² min, 250 cd/m² typical</p> <p>Status when shipped: 137 cd/m² with use of the video norm: 1280 x 1024/75 Hz VESA</p>
Contrast Ratio	400:1 min, 500:1 typical
Environment	<p>Transport and Storage (in original packaging): Ambient temperature: -20 to +60°C Temperature gradient <5°C/h Relative humidity, max 75% at +25°C, no condensation. Pressure 1040 to 674 hPa</p> <p>Operation: Ambient temperature: + 5 to + 35°C Temperature gradient <5°C/h Relative humidity, max 80% at +30°C, no condensation. Pressure 1040 to 860 hPa</p>
Installation	<p>Heat dissipation is achieved by "natural" convection; a fan is not installed. The free setup height as well as the side and rear distance must be at least 100 mm.</p> <p>However, installation in the DCS is permitted.</p>
Weight	5.7 kg, +/- 0.2

Pixel defects (dot = subpixel)	Maximum Number
white dots	7
black dots	8
white and black dots	10
2 connected white dots	1

Repair / Troubleshooting

NOTE

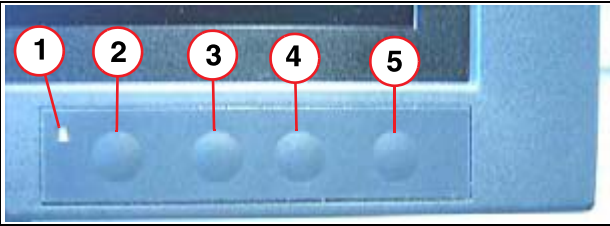
- In a malfunction situation, the TFT monitor is only completely replaced.
- With table application, the TFT monitor must be connected on the base provided; the black rubber seal from the replacement unit must be replaced with the silver one from the defective unit.
The table base, incl. silver rubber seal can also be ordered as replacement part.
- For replacement part numbers, see the SPC (Spare Parts Catalogue).
- Every defective monitor must be returned with an exact description of the malfunction. Without a description of the malfunction, it is virtually impossible to find sporadic and/or temperature-related effects or even system-related causes.
- To adapt to the particular system, see [\(System-related Adjustments / p. 20\)](#).

Test Equipment and Aids

- All required settings, see ([System-related Adjustments / p. 20](#)), must be performed using the push-buttons on the front of the unit.
- SMfit ACT luminous density meter See CB - DOC TD00-000.801.01... (Spare Parts Catalogue).

General Remark Regarding Use of the OSD Menu

Button Functions

<p>TFT Monitor, Part No. 30 99 959</p>	 <p><i>Fig. 3: DSC 1703 (push buttons)</i></p> <table> <tr> <td>Pos. 1</td> <td>Power LED</td> </tr> <tr> <td>Pos. 2</td> <td>Menu</td> </tr> <tr> <td>Pos. 3</td> <td>Up</td> </tr> <tr> <td>Pos. 4</td> <td>Down</td> </tr> <tr> <td>Pos. 5</td> <td>Set</td> </tr> </table>	Pos. 1	Power LED	Pos. 2	Menu	Pos. 3	Up	Pos. 4	Down	Pos. 5	Set
Pos. 1	Power LED										
Pos. 2	Menu										
Pos. 3	Up										
Pos. 4	Down										
Pos. 5	Set										
<ul style="list-style-type: none"> • The status of the TFT monitor is displayed by the power LED. On / OFF / Standby. • The front buttons are designed without a “designation”. • All required adjustments are made using the push-buttons located on the front frame. The push-buttons are blocked when shipped (new system). • Unlocking or locking them is done as follows: Press the SET button 1x. Press the Up button 3x. The OSD menu can then be selected using the Menu button. • The OSD menu can also be started without an input signal. 											

OSD Menu

Tab. 1 Button functions in the OSD menu

Button(s)	Action
Menu	Selection of the OSD / menu item
up (+)	Open the menu item, a sub menu can be recognized by the fact that the menu title is highlighted. To open the Service Level 2 menu, see (Tab. 2 / p. 11) . Set the value up or to the right.
down (-)	Set the value down or to the left.
Set	Close the menu item (press one level higher 1x).

Tab. 2 Blocking/Unblocking the OSD Menu

Function	Action
OSD Menu block or enable	<p>Press the Set button 1x and the Up button 3x.</p> <p>The OSD may not be opened to block or to release the OSD! If opened, first exit the OSD using "Undo".</p> <p>If the OSD is blocked, only switching the input signal with the Up and Down buttons is possible.</p>
Select Service Level 2.	<p>Press the Up button 1x and the Down button 2x.</p> <p>To get to the Service Level 2 menu, the following procedure is necessary:</p> <ul style="list-style-type: none"> • Select the OSD menu. • Select Service Level 2 with the Menu button. • Open the Service Level 2 menu by pressing the Up button 1x and the Down button 2x. <p>In service level 2, expanded adjustments can be performed.</p>
Adjustment Values Save	<p>Press the "Set" button as often as required until the "Undo" menu item appears.</p> <p>Any changes made are accepted with "Accept changes".</p> <p>The "new" settings are rejected with "Reject changes".</p> <p>Selection is made with the "Menu" button.</p> <p>Execute is made with the "Up" button.</p>

Tab. 3 OSD Menu

Menu	Brightness / Contrast	Brightness	
		Contrast	
		Backlight	
		Color	Selection => 2
		Set user color	not enabled
	Position / Zoom	H Position	Adjustable
		V-Position	Adjustable
		Zoom	Selection => Fill Screen
	Source	Source selection	Not required; selection is automatic
	Auto functions (can only be selected when controlled via the VGA D-Sub).	Auto Brightness Contrast	Use only if the monitor is completely incorrectly adjusted. Finally, the adjustment must be performed per (System-related Adjustments / p. 20) !
		Auto Position Phase Frequency	Use only if the monitor is completely incorrectly adjusted. Finally, the adjustment must be performed per (Size / Position / p. 20) !

	Language	German/English	Selection => English
	Others	Frequency / Phase	Can be adjusted, see (System-related Adjustments / p. 20)
		Sharpness	Selection => 3 Active only if the FBAS and/or the S-Video input is used.
		OSD Settings	If required, the position and the “transparency” of the OSD menu can be set here.
		DPMS settings	Selection On
		Status	Status display of the monitor (e.g. temp., operating hours.....)
	Service level 2	Calibration	For additional adjustments, selection, see (OSD Menu / p. 10) .
		User Settings	Factory set! It is possible to return to the factory setting under “Reset User settings” in this screen. All adjustments (B/KC/Phase/Frequency) must then be repeated!
		Test and Reset	“Reset to factory defaults” may not be used! If selected, original parameters are downloaded.
		Tolerance	Factory set.
		Others	Factory set. Only if required, the H image size can be adjusted under “ H Scaler clip ”.

Troubleshooting

- **General:**

Every defective TFT monitor must be replaced completely.

Fuses:

If a fuse is defective, the TFT monitor must be replaced. A fuse responds only if there is an error (in the TFT monitor). Because of this, replacing a fuse is not reasonable.

- **Troubleshooting:**

Malfunction	Possible Cause	Solution
TFT monitor displays no image, power LED is off.	Fuse defective. Power cable not plugged in or line power missing.	1. Fuse okay, line power present. 2. Replace the TFT monitor.
TFT monitor displays no image, power LED is on.	No video/synchronous signal (cable or video source). Inputs incorrectly plugged in, with a new installation.	1. Video/synchronous signal present. 2. Replace the TFT monitor.
Unclear image, defects in vertical lines	Frequency and/or phase incorrectly set. Disturbances in the video signal.	1. For frequency / phase setting, see (System-related Adjustments / p. 20) . 2. Make sure that the video signal has no disturbances. 3. Replace the TFT monitor.
Other malfunctions (sporadic)	Plug-in connection(s) loose.	1. Make sure that there is not a "control problem" (line power/video). 2. Replace the TFT monitor.

Malfunction	Possible Cause	Solution
Required contrast no longer reached?	BA signal is too low.	<ol style="list-style-type: none"> 1. The BA signal must be at least 0.5V, otherwise "full control" is no longer ensured. 2. An B/C adjustment under (Brightness / Contrast / p. 21) makes no improvement. 3. Replace the TFT monitor.
Uroskop Access Use: No Endo image	<ol style="list-style-type: none"> 1. Control to switch the input is missing (RS232). 2. Video signal missing at the SVHS input. 	<ol style="list-style-type: none"> 1. Make sure that the switch signal is present at "For Service and RS232 Bus" input. <ul style="list-style-type: none"> - Switch the RS232 connector to the "Live Monitor". - Switch OK => replace the monitor. - Switching defective. Look for an error in the control. 2. Make sure that the S-video signal is present. <ul style="list-style-type: none"> - Switch the S-video connector to the "Live Monitor" (also RS232 switching). - Image OK => replace the monitor. - Image not OK => look for an error in the S-video control.

Use

Table Application (Application with the Base)

Tab. 4 TFT monitor with stand

- In a replacement part situation, the TFT is always shipped without the base.
- Open the back wall of the stand base (snap in), see (Fig. 4 / p. 16).
- Unplug the connection cable, see (2/Fig. 5 / p. 16).
- Remove the TFT monitor from the stand base, see (1/Fig. 5 / p. 16).
- Install the replacement unit in the reverse order of the steps above.
- Replace the existing rubber seal (black) on the replacement unit with the silver rubber seal from the defective unit, see (Fig. 6 / p. 16).
- Perform adjustment per the application, see (System-related Adjustments / p. 20).

Note:

The “silver” rubber seal is part of the stand base shipment.

If the rubber seal is needed, a stand base must be ordered as a replacement part, see the SPC.



Fig. 4: TFT monitor, open base

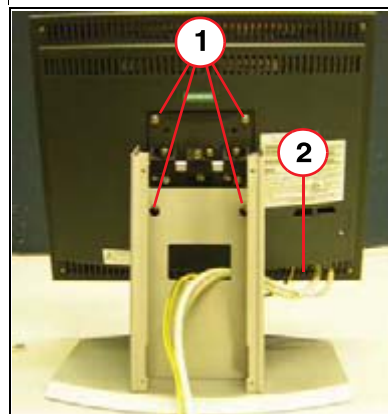


Fig. 5: TFT monitor, Vesa/cable

Pos. 1 Mounting screw (4x)

Pos. 2 Electrical connections (power/video/ground)



Fig. 6: TFT monitor, rubber seal

Monitor Carriage

Tab. 5 TFT on Trolley

- Remove the rear cover panel (connections).
- Unplug all electrical connections (Pos. 2/3/4).
- Remove the TFT monitor, 4 screws, Pos. 1.
- Install the replacement unit in the reverse order of the steps above.
- Perform adjustment per the application, see [\(System-related Adjustments / p. 20\)](#).

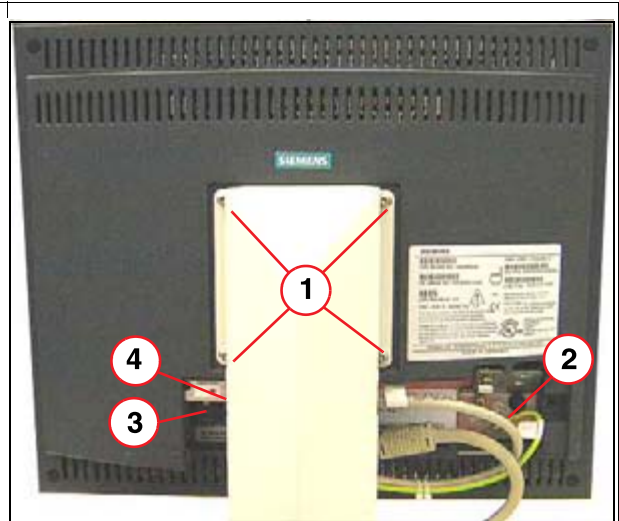


Fig. 7: DSC 1703-DC-V, trolley

- Pos. 1 VESA adapter
 Pos. 2 Ground connection
 Pos. 3 Power connection
 Pos. 4 VGA connection (D-sub)

DCS Application

- Loosen the two screws on the cover panel (do not remove them).
- Pull the screws “forward” and remove the cover panel.
- Unplug the electrical connections.
- If the TFT monitor is operated in a six/three-unit arrangement and a middle one fails, see also the following note regarding the 6-unit DCS.

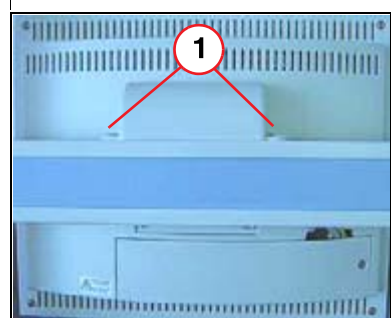


Fig. 8: DCS, mechanical connection

Pos. 2 screws for cover panel

- **Caution, the TFT monitor will tilt forward!!**
- Remove the 4 screws on the VESA adapter (connection from the TFT monitor to the DCS).
- Take the TFT monitor out of the DCS towards the front.
- Install the replacement unit in the reverse order of the steps above.

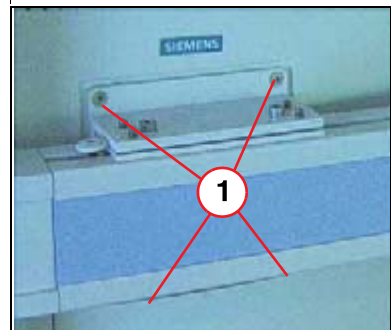


Fig. 9: DCS - TFT mechanical connection

Pos. 4 screws for VESA adapter

Note Regarding a 6-Unit DCS

- To make removing and installing the TFT monitor easier, an “outside” TFT monitor must be disconnected and moved “out”.
See illustration!
- Then the middle TFT monitor can also be disconnected and moved “out”. Removal/installation is then performed “normally”.



Fig. 10: Moving the DCS - TFT monitor

Support Arm Use (Uroskop Access)

- Open the rear cover panel.
- Disconnect all electrical connections, Pos. 1/2/3/4/5.
- Remove the TFT monitor, 4 screws, see Pos. 6.
- Install the replacement unit in the reverse sequence.
- Perform an adjustment per the application, see ([Uroskop Access / p. 36](#)).

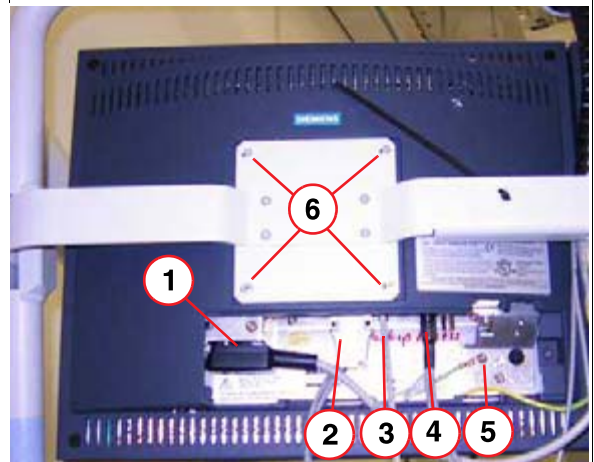


Fig. 11: Uroskop Access

Pos. 1	Power connector
Pos. 2	VGA connection (D-sub)
Pos. 3	Serial connector (system controller for video input)
Pos. 4	S Video connector
Pos. 5	Ground connection
Pos. 6	Vesa Adapter

AX Area

NOTE

- All values listed, including the listed tolerances, are “setting values”.
The listed tolerances are not values for the constancy check of the display!
- **OSD Operation:**
For general remarks regarding operation of the OSD menu (release of operation, etc.), see [\(OSD Menu / p. 10\)](#).
- Prior to beginning the adjustment, the monitor must be switched on for approx. 20 min.

AXIOM Artis VCR Operation

- When it is switched on, the display detects the applied video norm and automatically sets itself to it.
 - New norms that have not yet been set must be set. The next time this norm is used, the display sets the norm again automatically.
 - There is separate set of parameters in the display for each norm. This means that each norm used must be set individually! The backlight setting is the same for all norms.

Size / Position

- Image position:
 - Trigger fluoro and display an LIH image on the VCR-R monitor.

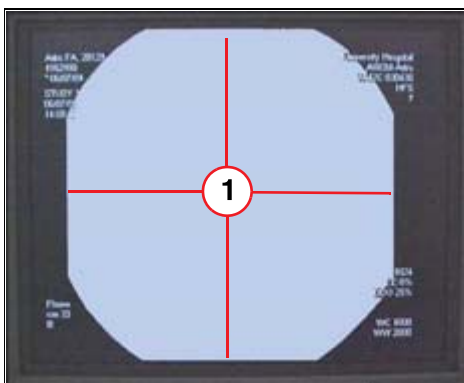


Fig. 12: VCR LIH, test image

Pos. 1 Image size, H - V

- **OSD Menu => Position / Zoom =>**
- **V-Position:**
For **60Hz**, set the application to **30**.
For **50 Hz**, set the application to **20**.

NOTE

The values from the slider in the menu "Position / Zoom" are again in the middle position after saving and again selecting the menu (with connection via S-Video); in this way, the "Adjustment Range" is expanded.

However the previously set value was accepted!

- **OSD Menu => Others => Service Level 2** (to select Service Level 2, see [\(Tab. 2 / p. 11\)](#)).
Using "**H - Scaler clip**". setH to V to the same amplitude (H amplitude can be changed), see [\(1/ Fig. 12 / p. 20\)](#).
- **H- Position, required only with the 60 Hz application**, with 50Hz, continue with the next step.
OSD Menu => Position / Zoom =>
Set the slider for H-Position to "0".
Exit OSD with Accept Changes.
Switch off the monitor, switch it back on.
OSD Menu => Position / Zoom =>
Set the slider for H-Position to "30".
- Exit the OSD menu with "Accept Changes" (press the Set button until the "Undo" menu is reached).
Or continue immediately with Brightness Contrast.

Brightness / Contrast

NOTE

The measurement is performed using the SMfit ACT meter; when doing this, the influence of the ambient light must be excluded (by covering the area around the measuring probe).

During the measurement, make sure that no pressure is exerted by the measuring sensor on the panel surface; this can cause damage or to a failure of the panel.

- Generating a Test Image
 - Select the current organ program in the Editor (see illustration), not the DSA program!
 - Position the center to "0".
Position the width to "1".
 - Select "Apply", not Store(!). In this way, the "old" values are again accepted by changing the program in the Editor.
 - Select "Close Editor".



Fig. 13: Editor
Pos. 1 Selecting the Editor

- Making a Recording
 - Collimate with the collimator, see illustration.
 - Trigger a brief exposure to display the image on the monitor.
 -



Fig. 14: VCR test image

- The brightness / contrast adjustment are made in: OSD main menu => Brightness / Contrast.
 - Set the slider for "**Contrast**" to **maximum**.
 - Set the slider for "**Brightness**" to "**30**".
 - Using the slider for "**Backlight**", set **137 cd/m² +15/-15 cd/m²** in the 100% field.
 - Using the slider for "**Brightness**", set **0.45 cd/m² +0.15/-0.05 cd/m²** in the black field.
 - Use the slider for "**Contrast**" to lower the contrast until the cd/m² value in the white area (measured with the SMFit meter) drops.
Then increase again using the slider until the previously set value (backlight value from the table) is just reached again.
 - Check the brightness value in the black area; if necessary, adjust it.
If it had to be "readjusted", the contrast value must also be rechecked, and if necessary, adjusted.
 - Save the new adjustment values:
Press the **Set** button as often as needed until the "**Quit OSD menu**" appears. Select "**Accept changes**".

- Switch the organ program at the AXIOM Artis and select it again; when this is done, the Window changes are reset to the original ones.
- Make a brief X-ray recording (also on DVD-R).
Playback of the recording from the DVD recorder must be optically the same on the monitor.

Blocking the OSD Menu Again

- Block the OSD menu again by pressing the combination "SET" 1 x and "Up" 3 x, see ([Button Functions / p. 10](#)).

AXIOM Artis DVD Recorder Mode

NOTE

- The TFT monitor detects the video norm that is set after switching on power and sets itself automatically to it.
 - New video norms that have not yet been set, must be set. The next time this norm is applied, the TFT monitor automatically assigns it again.
 - A separate set of parameters exists in the TFT monitor for each video norm. This means that each video norm used must be set individually! However, the setting for the back-light is the same for all video norms.
- The DVD recorder is operated at the S-video input of the TFT monitor.

General Settings

- OSD menu => Service Level 2 (for selection of Service Level 2, see ([Tab. 2 / p. 11](#))) => User settings.
Performing a Reset of the User Settings
- To prevent color saturation in the image, the image is displayed in black / white; to do this, perform the following setting:
 - OSD menu => Others => video settings => saturation
 - Set the slider to the "left stop".
 - Press the Up button 5x until the slider makes a brief movement to the right (the slider may not be at the left stop!).

Brightness / Contrast

NOTE

The measurement is made using the SMfit test meter; here, the influence of the ambient brightness must be excluded (by covering the area around the measuring sensor).

When making the measurement, make sure that the measuring sensor does not exert any pressure on the panel surface; this can cause the panel to be damaged or to fail.

- Generate a test image:
 - Select a **current organ program** (not DSA!).
Set the **Center** to "0".
Set **With** to "1".
"Select **Apply**", not Store (!!). When this is done, the "old" values are again accepted by switching selection of the organ program.
"Select **Close Editor**".
 - Collimate with the collimator, see illustration:



Fig. 16: VCR test image

- Trigger a brief exposure and make a DVD recording.
- Play back the VCR, select Play and Pause (image is displayed on the TFT monitor).
- Play back the recorded VCR test image with Play and Pause.
- Brightness / Contrast adjustments are made under: OSD main menu => Brightness / Contrast.
 - Set the slider for "**Contrast**" to **maximum**.
 - Set the slider for "**Brightness**" to "30".
 - Use the slider for "**Backlight**" to set $137 \text{ cd/m}^2 +15/-15 \text{ cd/m}^2$ in the 100% field.
 - Use the slider for "**Brightness**" to set $0.45 \text{ cd/m}^2 +0.15/-0.05 \text{ cd/m}^2$ in the black field.
 - Lower the slider for "**Contrast**" until the cd/m^2 value in the white field (measured with the SMFit meter) drops.
Again increase the slider until the previously set value is just reached.
 - Check the brightness value in the black field, adjust it if required.
If it needed to be "readjusted", the contrast value must again be checked, and if needed, adjusted.
 - Saving the new adjustment values:
Press the **Set** button until the "**Quit OSD menu**" appears. Select "**Accept changes**".

- Change the organ program at the AXIOM Artis and select it again; when this is done, the Window changes are again set back to their original settings.

Blocking the OSD Menu again

- Block the OSD main menu again by pressing the combination of "**SET**" 1x and "**Up**" 3x, see ([Button Functions / p. 10](#)).

Cathcor

- When it is switched on, the display detects the applied video norm and automatically sets itself to it.
 - New norms that have not yet been set must be set. The next time this norm is applied, the display automatically sets itself to the norm.
- Prior to beginning the adjustment, the monitor must be switched on for approx. 20 min.

Selecting the OSD Menu

For start and operation, see ([OSD Menu / p. 10](#)).

Adjustment / Configuration

NOTE

- **Currently, a "test image" cannot be started or made available on the Cathcor.**
Because of this, "default values" are defined for all relevant settings.
- **If other values are required for IQ or system-technical reasons, it is permissible to differ from these default values.**
Only the value for "Backlight" should not be increased above the default value for reasons related to wear!
- **For technical reasons, the display is not suitable for a sweep speed of 100 or can be only with significant quality restrictions.**

- Reset user settings (reset to "values when shipped"):
A reset of the user settings must be performed only if the adjustment does not produce the correct results!
 - Under: **Service level 2** (to select Service Level 2, see ([Tab. 2 / p. 11](#))) => **User settings => Reset User Settings**
perform a reset of the user settings.
- In the OSD menu under **Brightness / Contrast** =>
 - set the **Brightness** to **55**.
 - set the **Contrast** to **70**.
 - set the **Backlight** to **80**.

- In the OSD menu under **Others** =>
 - set **Frequency / Phase** => **Frequency** to 1472, **Phase** to 90.

NOTE

With **Frequency / Phase**, the most frequently used sweep speed can be optimized as regards streaks.

- set **Sharpness** => to 5.
- In the OSD menu, under: **Service Level 2** (to select Service Level 2, see [\(Tab. 2 / p. 11\)](#)) => **Calibration** =>
 - set **Select Display function** => to 1 (specified factory adjustment).
- If the image position (horizontal and/or vertical is not correctly displayed, it must be corrected in the OSD menu under Position / Zoom.
- Save the new adjustment values:
Press the **Set** button as often as needed until the “**Quit OSD menu**” appears. Select “**Accept changes**”.

Blocking the OSD Menu Again

- Block the OSD menu again by pressing the combination “**SET**” 1 x and “**Up**” 3 x, see [\(Button Functions / p. 10\)](#).

ICONOS R100.. / R200 ND

- When it is switched on, the display detects the applied video norm and automatically sets itself to it.
 - New norms that have not yet been set must be set. The next time this norm is applied, the display automatically sets itself to the norm.
- Prior to beginning the adjustment, the monitor must be switched on for approx. 20 min.

Selecting the OSD Menu

For start and operation, see [\(General Remark Regarding Use of the OSD Menu / p. 10\)](#).

Adjustment / Configuration

NOTE

- To ensure IQ, the adjustment must be performed in the following sequence.
- The Auto adjust / Reset of user settings may not be performed with the DIC test image; “only” the normal DIC image may be present.

- Reset user settings (reset to “values when shipped”):
 - A reset of the user settings must be performed only if the adjustment does not produce the correct results!
Under: **Service level 2** (to select Service Level 2, see (Tab. 2 / p. 11)) => **User settings => Reset user settings.**
perform a reset of the user settings.
Note: When this is done, the image display appears green (not an error).
- Configuration:
 - Under: **Service level 2** (to select Service Level 2, see (Tab. 2 / p. 11)) => **Others => set Signal to Monochrome.**
 - In the OSD menu, under: **Service Level 2** (to select Service Level 2, see (Tab. 2 / p. 11)) => **Calibration => Select Display function =>**
Up to/including Serial Number **001388** set to “2” (specified factory setting, Gamma curve).
Beginning with Serial Number **001389** set to “3”
If a unit with Serial Numbers < ...**001389** was ordered from the E warehouse, set to “3”, these units have been changed by the supplier!
- **Brightness / Contrast Adjustment**

NOTE

The measurement is performed using the SMfit ACT meter; when doing this, the influence of the ambient light must be excluded (by covering the area around the measuring probe).

During the measurement, make sure that no pressure is exerted by the measuring sensor on the panel surface; this can cause damage or to a failure of the panel.

NOTE**Contrast:**

Detection of the 95% fields in the 100% field (limitation) is adjusted using video gain (contrast).

Backlight:

The 100% field (maximum white) is adjusted using the backlight.

Brightness:

Adjustment of the black area (basic brightness and detection of the 5% field).

Select the black / white text image on the Videomed DIC:

- Videomed DIC
set the S2 - 3 / 4 / 5 / 5 switch to the On position.
- Press the S1 push button until the black / white test image is displayed on the TFT monitor.

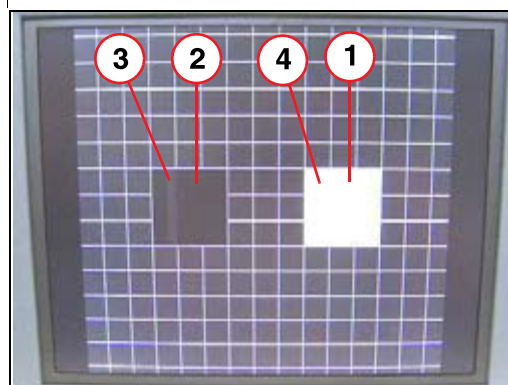


Fig. 17: Videomed DIC B/W test image

Pos. 1	White field (100% white)
Pos. 2	Black field (0% white)
Pos. 3	5% field
Pos. 4	95% field

- The adjustment is performed under: **OSD Menu => Brightness / Contrast.**
- Set the slider for **Brightness to the minimum.**
- Set the slider for **Contrast to the maximum.**
- "1" Use the slider for **Backlight** to set $160 \text{ cd/m}^2 \pm 10 \text{ cd/m}^2$ in the 100% field.
- "2" Use the slider for **Brightness** to set $0.5 \text{ cd/m}^2 \pm 0.2 \text{ cd/m}^2$ in the black field.
- "3" Lower the slider for **Contrast** until the **95% field is visible.**
- **"Alternately repeat adjustments 1, 2 and 3"** until the specified values are reached.
- Set the adjustment value under **Double Contrast** (e.g. current value = 30 to 60). The 95% field is not longer visible.

Note: If the value cannot be doubled (the adjustment value is > 50), the slider for contrast is set to the maximum.

- Using the slider for **Brightness**, set $0.5 \text{ cd/m}^2 \pm 0.2 \text{ cd/m}^2$ in the black field.
- Save the new adjustment values:

Press the **Set** button as often as needed until the **"Quit OSD menu"** appears. Select **"Accept changes"**.

- Block the OSD menu again by pressing the combination **"SET"** 1 x and **"Up"** 3 x.
- Switch off the test image in the Videomed DIC:

Set the Videomed DIC S2 - 3 / 4 / 5 / 6 switch to the Off position.

Press the S1 push button; there will be a reset and the "normal" image will be displayed again.

NOTE

- The best possible IQ is ensured by this Brightness/Contrast adjustment.
 - If the customer complains about “cutoffs” in bright areas, the contrast can be set lower. In this way, cutoffs are minimized.
However, in this case, the image is displayed with lowered contrast!
-

SP Department

SIREMOBIL Compact / L / Iso-C

NOTE

- All values listed, including the listed tolerances, are “setting values”.
The listed tolerances are not values for the constancy check of the display!
- OSD Operation:
For general remarks regarding operation of the OSD menu (release of operation, etc.), see [\(OSD Menu / p. 10\)](#).
- Prior to beginning the adjustment, the monitor must be switched on for approx. 20 min.
- The TFT monitor on the Siremobil is controlled via the VGA (D-sub) input.

Requirements

The basic unit and the monitor cart are connected to each other; the system is fully functional.

Memoskop Programming

NOTE

- Memoskop programming is not required "only" for the TFT monitor replacement (already programmed) ==> continue with [\(Programming at the TFT Monitor / p. 31\)](#).
- Flicker-free display is possible with the TFT monitors, even at 50 Hz / 60 Hz.
- The video frequency on the MEMOSKOP must therefore be set to the video frequency of the VIDEOMED DC camera.

- Start the Technical Setup on the MEMOSKOP (CTRL + T) and enter the password.
- Select the “**2. Video frequency**” menu.
 - With 50 Hz, set the VIDEOMED DC camera to 50 Hz and save by pressing the “Return” button.
 - With 60 Hz, set the VIDEOMED DC camera to 60 Hz and save by pressing the “Return” button.
- Exit the Technical Setup by pressing the “**HOME**” button [**>I<**].

Programming at the TFT Monitor

- Open the OSD, to select it, see [\(Tab. 2 / p. 11\)](#).

- **Service level 2** (to select Service Level 2, see (Tab. 2 / p. 11)) => **Tolerance**.
 - Under "**Norm group**" => select "**Memoskop**", exit the menu with "Set".
- **Service level 2** (to select Service Level 2, see (Tab. 2 / p. 11)) => **Others**, exit the menu with "Set".
 - Under "**Signal**" => select "**Monochrome**", exit the menu with "Set".
- **Service level 2** (to select Service Level 2, see (Tab. 2 / p. 11)) => User Settings => select Reset User Settings with the "Up" key.
(with this procedure, the "Memoskop Norm" is reliably detected).

Checking / Adjusting Brightness, Contrast and Geometry with Camera Synchronization

- Select "User Setup" at the MEMOSKOP.
- Select the SMPTE test pattern, close the User Setup again with the "Home" button.
- Select LUT 1 for both TFT monitors.

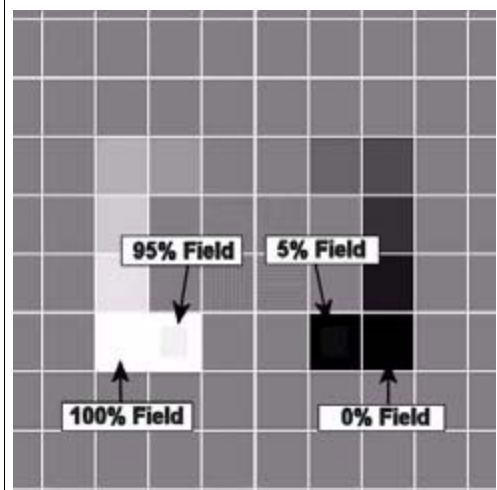


Fig. 18: MEMOSKOP SMPTE test pattern

Tab. 6 TFT Adjustment

- **Check:**
 - Measurement values:
 0% field = 0.45 cd/m. +/- 0.1 cd/m
 100% field => 137cd/m, +/- 10cd/m
 The 5% field and the 95% field must be detectable.
 If the measurement values are not reached or if the fields cannot be detected, perform an adjustment.
- **Brightness / Contrast Adjustment:**
 - The adjustment is performed under: **OSD Menu => Brightness / Contrast.**
 - Set the slider for **Brightness to the minimum.**
 - Set the slider for **Contrast to the maximum.**
 - "1" Using the slider for **Backlight**, set **137 cd/m² +/-10 cd/m²** in the 100% field.
 - "2" Using the slider for **Brightness**, set **0.45 cd/m² +/- 0.1 cd/m²** in the black field.
 - "3" Lower the slider for **Contrast** until the **95 % field is still just visible.**
 - **"Alternately repeat adjustments 1, 2 and 3"** until the specified values are reached.
 - The 5% field and the 95% field must be detectable.
 - Press the button until Accept changes is selected. Save the adjustment values with the "Up" key.
- **Image Geometry:**
 - The SMPTE test pattern must be displayed.
 - The image geometry must correspond to the illustration ([Fig. 18 / p. 32](#)).
 - The center vertical and horizontal lines in the SMPTE test pattern must be detectable. If there are differences, the image geometry must be corrected.

Checking / Adjusting Brightness, Contrast and Geometry in the "Stand Alone" Mode (Memoskop)

- Disconnect the monitor cart from the basic unit, unplug the X10 connector.
- Select "User Setup" at the MEMOSKOP.
- Select the SMPTE test pattern, close the User Setup again with the "Home" button.
- Select LUT 1 for both TFT monitors.

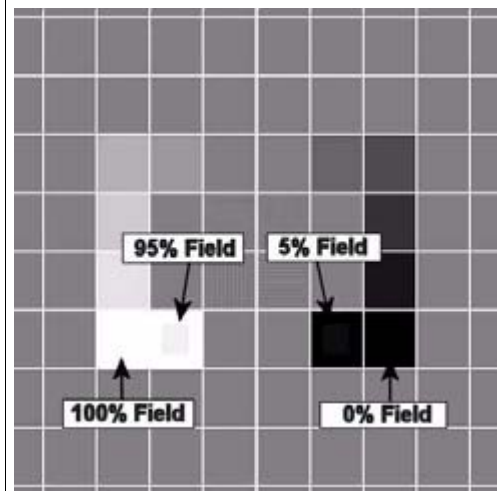


Fig. 19: MEMOSKOP SMPTE test pattern

Tab. 7 TFT Adjustment

- **Check:**

- Measurement values:

0% field = 0.45 cd/m, +/-0.1 cd/m

100% field => 137cd/m, +/- 10cd/m

The 5% field and the 95% field must be detectable.

If the measurement values are not reached or if the fields are not detectable, perform an adjustment.

Note:

Adjustment of the "Backlight" has already been performed with "Camera Synchronization" and may not be changed. A change in this "mode" will also cause a change in the adjustment of the "Camera Synchronization".

Backlight adjustment can be performed only once for all configured modes.

- **Brightness / Contrast Adjustment:**

- The adjustment is performed under: **OSD Menu => Brightness / Contrast.**
- Set the slider for **Contrast to maximum.**
- Use the slider for **Brightness** to set **0.45 cd/m² +/- 0.1 cd/m²** in the black field.
- Lower the slider for **Contrast** until the **95% field is just visible.**
- **"Alternately repeat"** the adjustment until the specified values are reached.
- The 5% field and the 95% field must be detectable.
- Control measurement: In the 100% field, **137 cd/m² +/- 10 cd/m²** must result. If the value is not maintained, repeat the adjustment beginning from [\(Checking / Adjusting Brightness, Contrast and Geometry with Camera Synchronization / p. 32\)](#).
- Press the button until Accept changes is selected. Save the adjustment values with the "Up" key.

- **Image Geometry:**

- The SMPTE test pattern must be displayed.
- The image geometry must correspond to the illustration [\(Fig. 19 / p. 34\)](#).
- The center vertical and horizontal lines in the SMPTE test pattern must be detectable. If there are differences, the image geometry must be corrected.

Uroskop Access

NOTE

- The DSC 1703-DC-V (Material Number 30 99 959) is used with the Uroskop Access as a Live and Reference monitor on the TFT support arm (version beginning 01/2005; Material Number 77 57 565).

- All values listed, including the listed tolerances, are setting values”.

The listed tolerances are not values for the constancy check of the display!

- OSD Operation:

For general remarks regarding operation of the OSD menu (release of operation, etc.), see ([OSD Menu / p. 10](#)).

- Prior to beginning the adjustment, the monitor must be switched on for approx. 20 min.
 - The last adjustment values are noted in the chapter ([Adjustment Values / p. 42](#)).
-

Size / Position

NOTE

- The screen display must be "display filling". If this is not the case, the size and position must be adjusted manually.
 - The image position has to be centered to the display frame. The white edge and/or the contour of the on-screen legend have to be visible at all display edges. Information cannot be truncated.
-

- For the adjustment, download the "EXP_TestbildExposure" from the local database (Fig. 20 / p. 37) in the Patient List under "IQ Test Images" to the Viewer (Fig. 21 / p. 37) and display the test image on the particular monitor.



Fig. 20: SMPTE test pattern

- Select the OSD menu (to select it, see (Tab. 2 / p. 11)) with the "Menu" button.
- Select the "Position/Zoom" menu with the "Menu" button and press the "Up" key 1x.
- Adjust the image position using the "H position" and "V position" sliders (change the setting values with the "Up" and "Down" keys).
- Select the "Zoom" menu item with the "Menu" button and "1:1" with the "Up" key.
- Press the "Set" key until the menu with the selection "Accept Changes" and "Reject Changes" appears.
- Save the settings that were made by pressing the "Up" key with the "Accept Changes" menu point selected.

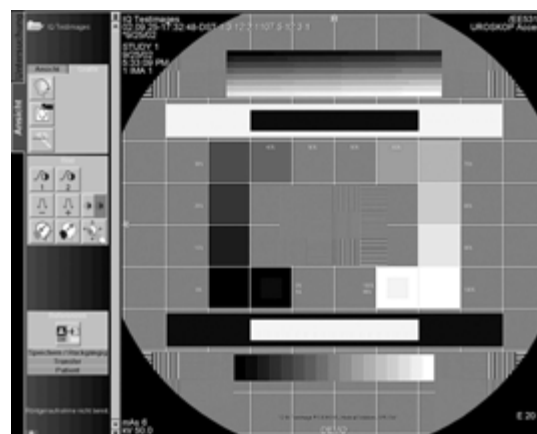


Fig. 21: EXP_test pattern exposure

Brightness / Contrast

NOTE

- Adjustment of the brightness and backlight is made using the SMFit test meter, for the setting values, see the document "Image Quality Quick Test" (document number SPL5-330.820), sub chapter "Monitor Check".

When performing the measurement, make sure that the measuring sensor does not exert any pressure on the panel surface.

- The OSD menu is used to set the brightness, backlight, and contrast.

- For the adjustment, download the (Fig. 21 / p. 37) test image from the local database in the Patient List under "IQ Test Images" (Fig. 20 / p. 37) to the Viewer (Fig. 21 / p. 37) and display the test image on the particular monitor.
- Call the OSD menu with the "menu" key.
 - The menu item "brightness/contrast" is selected automatically.
- Press the "up" key once (1x).
- Adjust the brightness, contrast and backlight with the sliders (change the setting values with the "up" or "down" key) as described.
- Adjust the basic brightness in the 0% field using the slider for brightness to the value specified in the IQ Quick Test (document number SPL5-330.820..).
- Increase the contrast with the slider for contrast to the max. Move the contrast value back so that the 95% field is just still detectable.
- Adjust the basic brightness in the 100% field using the slider for backlight to the value specified in the IQ Quick Test (document number SPL5-330.820..).
- If needed, repeat the adjustment procedure (0% field and 95% field).
- The 5% field and the 95 % field must be detectable.

NOTE

The adjustment of "backlight" that is made here remains applicable for all signal sources because with this monitor mode, it is not possible to save a second configuration for "backlight".

Frequency/phase**NOTE**

The frequency and phase settings must be corrected manually.

- For the adjustment, download the (Fig. 21 / p. 37) test image from the local database in the Patient List under "IQ Test Images" (Fig. 20 / p. 37) to the Viewer (Fig. 21 / p. 37) and display the test image on the particular monitor.
- Call the OSD menu with the "menu" key.
 - The menu item "brightness/contrast" is selected automatically.
- Use the "menu" key to select the menu item "Additional".
- Press the "up" key once (1x).
 - The menu item "brightness/contrast" is selected automatically.
- Adjust the image position with sliders "H position" and "V position" (change the setting values with the "up" or "down" key).
- Press the "Set" key until the menu appears that let's you select "accept changes" and "reject changes".
- Store the settings performed by pressing the "up" key when in the menu item "accept changes."

NOTE

All vertical lines in the image center have to be visible in the SMPTE test image. Additionally, the eight-line grey wedge has to be visible in the upper part of the image without shading. The entire test image must be free of moire structures or artifacts.

Color setting

- Call the OSD menu with the "menu" key.
 - The menu item "brightness/contrast" is selected automatically.
- Press the "up" key once (1x).
- Select menu item "color" with the menu key as well as the "up" key "2".
- Press the "Set" key until the menu appears that let's you select "accept changes" and "reject changes".
- Store the settings performed by pressing the "up" key when in the menu item "accept changes."

Adjusting "Force S-Video"

- Call the OSD menu with the "menu" key.
 - The menu item "brightness/contrast" is selected automatically.
- Select the "Service Level 2" menu in the OSD menu (to select Service Level 2, see [Tab. 2 / p. 11](#)).
- Select the "Additional" menu item with the menu key. Press the "up" key once (1 x).
- Use the "menu" key to select the menu item "enforce S video".
- Select "on" with the "up" key.
- Press the "Set" key until the menu appears that let's you select "accept changes" and "reject changes".
- Store the settings performed by pressing the "up" key when in the menu item "accept changes."

DPMS setting

- Call the OSD menu with the "menu" key.
 - The menu item "brightness/contrast" is selected automatically.
- Select the "Additional" menu item with the menu key. Press the "up" key once (1 x).
- Select the "DPMS setting" menu item with the "menu" key. Press the "up" key once (1 x).
- Select "on" with the "up" key.
- Press the "Set" key until the menu appears that let's you select "accept changes" and "reject changes".
- Store the settings performed by pressing the "up" key when in the menu item "accept changes."

Settings for endoscopy (option: only at the reference monitor).

NOTE

- When replacing display DSC 1703-DC-V as reference monitor, the following settings/tests have to be performed if the endoscopy interface exists.
 - For additional test you require the operating instructions for the endoscopy light source and the endoscopy camera unit (is on-site at the customer's facilities).
 - For the settings described in what follows the video signal has to be present at the input of the endoscopy interface. It also should be able to display it at the reference monitor on the TFT support arm by using the "Endo US Ref" key at the table control panel of the system.
 - If changes in image position are performed in the video mode (the video signal is present at the input of the endoscopy interface), these changes are usually saved. When exiting the menu, the "reject changes" menu is not in effect.
 - When saving the minimum value for color saturation in the video mode, this value is not saved. The 50% default value is automatically selected when switching off/on the monitor.
 - Changes of the adjustment value for the backlight cannot be performed when setting the endoscopy image.
-

Adjusting Brightness

- Test to see whether the camera unit is set to automatic operation (that is, the light source regulates the level of lighting as a function of the environment illuminated by the endoscope).
- Verify the video connection between camera unit and light source.
- Remove the flexible or rigid component at the endoscope guided by the physician into the patient. Additionally, darken the camera head completely.
 - The reference image appears completely dark.
- Use the SMFit measurement device to measure the luminance in the black display on the reference monitor.

- The measurement value must be 0.45 cd/m² (+ 0.15/- 0.5 cd/m²).
 - Adjustment: Select the OSD menu with the "Menu" button.
 - The "Brightness / Contrast" menu item is selected automatically.
 - Press the "Up button" 1x.
 - Use the slider for brightness to adjust to 0.45 cd/m² (+ 0.15/- 0.05 cd/m²).
 - Set the slider for contrast to the maximum.
 - Shine the light from a flashlight directly into the camera head (to generate an image that is as white as possible).
 - Lower the slider for contrast until the white value measured with the SMFit drops.
 - Increase the slider for contrast again until the measurement value is slightly below the previously measured max. value.

NOTE

- **Upon customer request, the black display setting can be set to max. 1 cd/m² via the brightness.**

Color setting

- Call the OSD menu with the "menu" key.
 - The menu item "brightness/contrast" is selected automatically.
- Press the "up" key once (1x).
- Select menu item "color" with the menu key as well as the "up" or "down" key "3".
- Press the "Set" key until the menu appears that let's you select "accept changes" and "reject changes".
- Store the settings performed by pressing the "up" key when in the menu item "accept changes."

NOTE

If the customer wishes a color impression that is slightly higher than the Color 3 recommended here, perform a customer-specific color setting as described below.

NOTE

The following table values should be viewed as a recommended and can be adapted to conform to the customer's request.

- Call the OSD menu with the "menu" key.
 - The menu item "brightness/contrast" is selected automatically.
- Press the "up" key once (1x).
- Select menu item "color" with the menu key as well as the "up" or "down" key "User".
- Select the "Setting the user color" menu with the "menu" key. Go the sub-menu with the "up" key.

- Set the following default values with the slider:
 - Color temperature RED==> 3
 - Color temperature GREEN==> 0
 - Color temperature BLUE==> -3
- Press the "Set" key until the menu appears that let's you select "accept changes" and "reject changes".
- Store the settings performed by pressing the "up" key when in the menu item "accept changes."

Live and Reference Monitor Color Adaptations

If the Live and Reference monitors are color-adjusted to each other, the Live monitor must be adjusted to the Reference monitor as follows.

- Perform the "User" adjustment in the "Brightness / Contrast - Color" menu.
- Then select the "Brightness / Contrast" menu user color with the Up key. Then perform the color adaptation in the menu that is displayed.

Color saturation

NOTE

Change the color saturation only upon customer request.

- Call the OSD menu with the "menu" key.
 - The menu item "brightness/contrast" is selected automatically.
- Select the "Additional" menu item with the menu key. Press the "up" key once (1 x).
- Use the "menu" key and select the menu item "video setting>" Set the color saturation requested by the customer at the slider "color saturation." Use the "up" or "down" key.
- Press the "Set" key until the menu appears that let's you select "accept changes" and "reject changes".
- Store the settings performed by pressing the "up" key when in the menu item "accept changes."

Adjustment Values

NOTE

Make a note of the values that are to be set for the customer system in the following table.

Tab. 8 Adjustment Values:

Parameters	Adjustment value.
Adjustment using SMPTE test image	
H-Position	
V-Position	

Parameters	Adjustment value.
Zoom (default 1.1)	
Brightness	
Contrast	
Backlight	
Frequency	
Phase	
Color (default: 2)	
Color Saturation	
Induced S - Video (default: On)	
DPMS (default: Off)	
Adjusting the Endo image at the reference monitor	
Window	
Color (default: 3)	
RED color temperature (if a customer-specific color setting is wished).	
GREEN color temperature (if a customer-specific color setting is wished).	
BLUE color temperature (if a customer-specific color setting is wished).	
Color saturation	
Zoom (default: filling)	

- Under "Replacing the TFT Monitor:
Support Arm application (Uroskop Access) => new.
- Under System-specific Adjustments:
Chapter "SIREMOBIL Compact / L / Iso-C" => changed.
Chapter "Uroskop Access" => new.
Chapter "AXIOM Artis DVD-R Mode" => new.
Chapter "ICONOS R100../ R200 ND" => changed.